

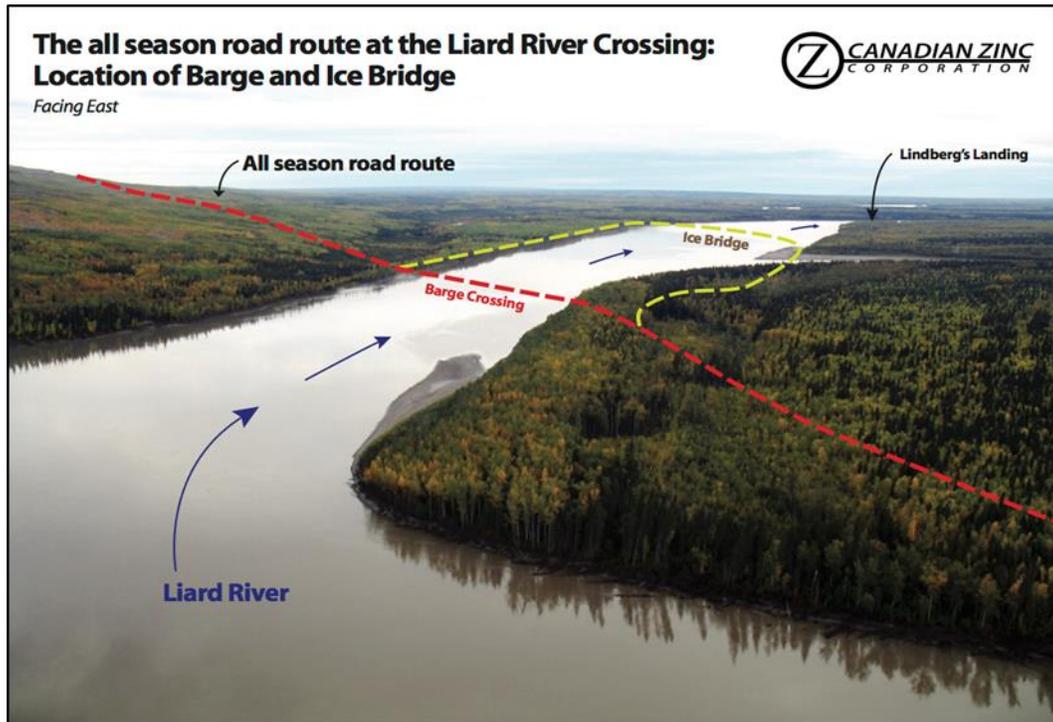


NorZinc

Parent Company of Canadian Zinc

PRAIRIE CREEK MINE

STAGING AREA FOR PHASE 1 WINTER ROAD WASTE MANAGEMENT PLAN Version 2.0



September 2021

Preamble

This *Waste Management Plan* applies to the staging area on the north side of the Liard River that will support the construction of the All-Season Road Phase 1.

The following formal distribution has been made of this plan:

Mackenzie Valley Land and Water Board

Canadian Zinc Corporation - Prairie Creek Mine Office

NorZinc - Vancouver Office

Additional copies and updates of this Plan may be obtained by writing to:

NorZinc
Suite 1710-650 West Georgia Street,
Vancouver, British Columbia
V6B 4N9
Phone: 604-688-2001
Fax: 604-688-2043
Email: David.Harpley@NorZinc.com

Prairie Creek Mine:

Mailing Address:

Canadian Zinc Corporation
Prairie Creek Mine
9926 101 Ave
Fort Simpson, NT, X0E 0N0

TABLE OF CONTENTS

LIST OF ACRONYMS	IV
GLOSSARY	V
CONFORMANCE TABLE	VI
1.0 INTRODUCTION.....	1
1.1 Company Name, Location and Mailing Address	2
1.2 Purpose, Scope and Project Description	2
1.3 CZN Environmental Policy	2
1.4 Regulatory Requirements	3
1.4.1 Federal Legislation	3
1.4.2 Territorial.....	3
1.5 Project Setting	4
2.0 IDENTIFICATION AND MANAGEMENT OF WASTE TYPES	5
2.1 Waste Overview.....	5
2.2 Domestic Waste.....	6
2.3 Hazardous Waste	6
2.4 Recyclable Waste	7
2.5 Domestic Sewage.....	7
2.6 Training & Certification.....	7
2.7 Environmental Mitigation.....	9
REFERENCES	10

LIST OF FIGURES IN TEXT

Figure 1: Basic Principles of Waste Management	1
--	---

LIST OF ACRONYMS

Acronyms/Abbreviations	Definition
AANDC	Aboriginal Affairs and Northern Development Canada
CCME	Canadian Council of Ministers of the Environment
ASR	All Season Road
CZN	Canadian Zinc Corporation
DFO	Department of Fisheries and Oceans
EA	Environmental Assessment (Process)
GNWT	Government of the Northwest Territories
ha	Hectare
km	Kilometre
KP	Kilometre Post
m	Metre
m ³	Cubic Metre
M	Million
Mine	Prairie Creek Mine
MVLWB	Mackenzie Valley Land and Water Board
MVRB	Mackenzie Valley Review Board
NNPR	Nahanni National Park Reserve
NWT	Northwest Territories
ROMP	Road Operations and Maintenance Plan
ROW	Right-of-Way
RWED	Renewable Resources, Wildlife, and Economic Development
TDG	Transportation of Dangerous Goods
WHMIS	Workplace Hazardous Materials Information System
WMP	Waste Management Plan
WSCC	Worker's Safety & Compensation Commission

GLOSSARY

Combustible Non-Hazardous Waste	Waste that can be incinerated such as kitchen and food waste, cardboard, wood, paper, etc.
Domestic Waste	Domestic waste typically consists of packaging, tins, food scraps and drink containers.
Domestic Sewage	Black and grey waste water
Four Rs of Waste Management	Reduce, Reuse, Recycle, Recover
Non-Combustible Non-Hazardous Waste	Waste that cannot be burned such as scrap metal, Exposed solid rock or rock underlying loose deposits such as soil or alluvium.
Recyclable Waste	Waste that can be recycled such as beverage containers, batteries, electrical equipment, etc.

CONFORMANCE TABLE

MVLWB Reasons for Decision Aug 29, 2019	As personnel will be on site during mobilization and demobilization activities, the Plan should be revised to reflect the potential for on site waste management and off-site waste disposal, including domestic sewage (Reviewer Comment Table: GNWT-ENR 1; GNWT-Lands – Dehcho Region 2; GNWT Land Use Advisor 10 and 11)	GNWT-ENR 2: Section 2.3 GNWT-Dehcho Region 2: Section 2.5 GNWT Land Use Advisor 10: Section 1.2 GNWT Land Use Advisor 11: Section 1.2
MVLWB Reasons for Decision Aug 29, 2019	Attach the appropriate notification to fulfill Condition 42 (OFF-SITE DISPOSAL) or describe a plan to obtain it (GNWT-ENR 1,19)	GNWT ENR 1: Section 2.1 GNWT-ENR 19: Section 2.3
MVLWB Reasons for Decision Aug 29, 2019	Include contact information for mine site personnel as these individuals are closest in proximity to the Staging area (GNWT-Land Use Advisor 6)	GNWT-Land Use Advisor 6): Section 1.1
MVLWB Reasons for Decision Aug 29, 2019	As the Permit scope allows for the use of equipment, there is the potential to have spills, wastes from remediating these spills. Include connections to the Spill Contingency Plan in the Waste Management Plan, Version 2	Section 2.7
MVLWB Reasons for Decision Aug 29, 2019	The revised Plan (Version 2) will be considered to be approved upon written conformation of conformity from the Board staff (condition 74)	Submission of this Plan Version 2.0 September 9, 2021.

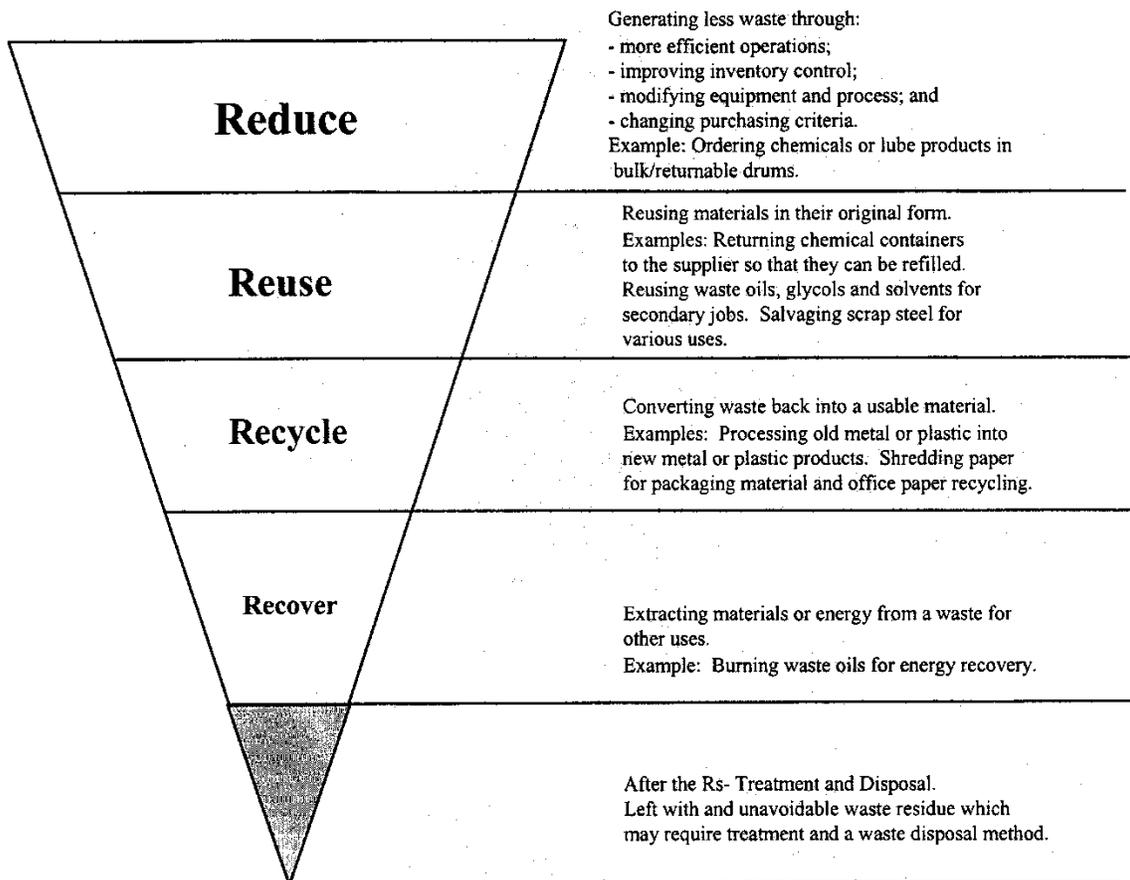
1.0 INTRODUCTION

This Waste Management Plan (WMP) is for a proposed staging area on the north side of the Liard River. Equipment will be staged in advance of winter road construction. Staging will likely commence in early October 2021. Winter road construction is scheduled to start on November 1, 2021.

This WMP was prepared in general accordance with the Mackenzie Valley Land and Water Board's (MVLWB 2011) Guidelines for Developing a Waste Management Plan and to meet LUP MV2019T0021 Condition 74 which requires the resubmission of the Waste Management Plan to the MVLWB for approval

CZN is committed to undertaking waste collection, storage and disposal in a safe, efficient and environmentally responsible manner, actively encouraging and implementing the four R's of waste management, namely: waste reduction, recovery, reuse and recycling, as generally summarized in Figure 1.

Figure 1: Basic Principles of Waste Management



1.1 Company Name, Location and Mailing Address

Company Name:

NorZinc (formerly Canadian Zinc)

Head Office:

Suite 1710-650 West Georgia Street, Vancouver, BC, V6B 4N9

Phone: 604-688-2001

Fax: 604-688-2043

Email: David.Harpley@NorZinc.com

Prairie Creek Mine – Site Manager:

Iridium 9555 Satellite Phone 1 (yellow) 011-8816-315-30998

Iridium 9505A Satellite Phone 2 (black) 011-8816-315-30997

Iridium 9505A Satellite Phone 3 (orange) 011-8816-315-30996

Ground-To-Air Radio Handheld FREQ 122.800

1.2 Purpose, Scope and Project Description

The purpose and scope of CZN's Waste Management Plan (WMP) is to ensure that all wastes produced by activities associated with the staging area are handled, stored or disposed of in a safe and responsible manner and comply with all applicable legislation, regulations, authorizations, permits and licenses for the duration of the Project.

To achieve this, the Plan:

- Identifies waste types potentially generated
- Identifies procedures to promote reduction, reuse, and recycling of waste materials
- Identifies practices and procedures for waste handling, collection, storage, transport, and disposal, and
- Identifies waste monitoring and mitigation procedures.

The scope of use for the Staging Area will be limited to drop off of equipment listed in Section 2.1 Table 1 and no personnel will be working from this location. Workers will drop off the equipment and return the to barge. Therefore, no waste is expected to be generated and any waste that is generated during the barging will be managed off-site of the Staging Area.

As per Condition 52 of LUP MV2019T0021 Canadian Zinc will post the required security amount prior to the commencement of the land-use operation.

1.3 CZN Environmental Policy

It is CZN's policy to achieve and maintain a high standard of environmental care in conducting its business as a resource company, and through its developments, contribute to sustaining society's material needs. Canadian Zinc's approach to environmental management seeks continuous improvement in performance by incorporating evolving scientific knowledge and community expectations into its operations.

Specifically, it is CZN's policy to:

- Comply with and adopt the spirit of all applicable laws, regulations and standards, and where laws do not adequately protect the environment, apply standards that minimize any adverse environmental impacts resulting from its operations, products and services.
- Communicate openly and in a timely manner with government on environmental issues, and contribute to the development of policies, legislation and regulations that may affect CZN and its operations.
- Recognize local communities as stakeholders and engage with them in a process of open engagement and timely communication regarding environmental management issues and impacts and seek to involve them in decision making and implementation.
- Ensure that employees and suppliers of goods and services are informed about this policy and that they are aware of their environmental responsibilities in relation to CZN's business.
- Develop and implement management systems to identify, control and monitor potential environmental risks arising from operations, and be prepared to respond to adversity.

1.4 Regulatory Requirements

Specific legislation, regulations and guidelines related to waste management in the Northwest Territories include:

1.4.1 Federal Legislation

- *Canadian Environmental Protection Act* (1999)
- *Waters Act* S.N.W.T (2014)
- Canada –Wide Standards for Petroleum Hydrocarbons (PHC) in Soil (CCME 2001)
- *Transportation of Dangerous Goods Act* and Regulations (1992)
- *Work Site Hazardous Materials Information System (WHMIS) Safety Act*
- *Territorial Lands Act* (1985)
- *Explosives Act* (1985)
- Technical Document for Batch Waste Incineration (Environment Canada 2009).

1.4.2 Territorial

- Guidelines for Developing a Waste Management Plan (MVLWB 2011)
- Guideline for the General Management of Hazardous Waste in the NWT (RWED 1998)
- Guideline for Waste Antifreeze (RWED 1998)
- Guideline for Waste Batteries (RWED 1998)
- Guideline for Waste Solvents (RWED 1998)
- MVLWB Land Use Permit (to be issued)

-
- MVLWB Water Licence (to be issued)
 - NWT *Environmental Protection Act* (1988)
 - NWT *Public Health Act* (1988)
 - NWT *Transportation of Dangerous Goods Act* (1990)
 - NWT *Waters Act* (last amended April 1, 2014)
 - Used Oil and Waste Fuel Management Regulations (GNWT 2003).
 - Yukon Territorial Government Design Specifications for Sewage Disposal Systems (June 2016)
 - Yukon Territorial Government Environmental Health Services Guidelines for Greywater Disposal at Remote Camps (March 2012)

1.5 Project Setting

The staging area is located at 61° 4' 7.7" north latitude and 123° 17' 41.4" west longitude. The area is part of a large, historical debris fan stretching down to the Liard River shoreline, and the area is 60-100 m from the shoreline. The substrate is rocky and gravelly with sparse vegetation. A figure showing the staging area location is attached. Below is a photo showing staging area ground conditions.



2.0 IDENTIFICATION AND MANAGEMENT OF WASTE TYPES

2.1 Waste Overview

A material is considered to be a waste when it can no longer be used for its original intended purpose. Types of waste include the following general categories:

- Domestic Wastes (Combustible and non-combustible - non-hazardous wastes)
- Hazardous wastes
- Recyclable waste
- Domestic sewage

Table 1 below defines the equipment and materials proposed to be staged within the staging area. No waste is expected to be generated during staging and therefore no waste disposal is required to be transported and disposed in any of the local communities.

Table 1: Proposed Staging Equipment and Materials

Proposed Equipment and Materials	Number
Cat 330 Excavator (30 ton) or equivalent. Attachments bucket and thumb, power clam with cut off saw or snip cutting head	1
Cat D7 Crawler Dozer or equivalent. With pull winch	1
Crew Track Carrier. Equipped with flat deck and crane/hoist. Support fuel haul, materials, tool box carrier, ETV,	1
Line Skidder 22 ton	1
Tracked Skid Steer (12,000lbs). Attachments mulcher, dozer blade, bucket, forks	1
Service/repair truck	1
Empty 1000 l fuel tanks, double walled.	2
Crew Camp skid trailers, 10' x 30'	2
Portable Genset/Light plant	1
60' portable bridge deck with crane mats	1
Rig mats	24
Porta Potti	1

60 cm diameter x 8 m steel pipe	6
---------------------------------	---

2.2 Domestic Waste

Domestic waste consists of packaging, tins, food scraps and drink containers. No domestic waste will be generated during staging, and none will be left after the equipment listed in 2.1 above has been staged.

2.3 Hazardous Waste

A hazardous waste is a contaminant which is a dangerous good that is no longer used for its original purpose and is intended for recycling, treatment, disposal or storage.

A hazardous waste does not include a contaminant that is:

- household in origin;
- included in class 1, Explosives or class 7, Radioactive materials of the Transportation of Dangerous Goods Regulation (TDGR);
- exempted as a small quantity;
- an empty container; or
- intended for disposal in a sewage system or by landfilling that meets the applicable standards set out in schedules I, III or IV of the Guideline for Industrial Waste discharges in the NWT.

A small quantity is “*hazardous waste that is generated in an amount that is less than 5 kilograms per month if a solid or 5 litres per month if a liquid; and where the total quantity accumulated at any one time does not exceed 5 kilograms or 5 litres. This does not apply to wastes that are mercury or in classes 2.3, 5.1 or 6.1 of TDGR. These wastes must be generated in an amount less than 1 kilogram per month if a solid or 1 litre per month if a liquid; and where the total quantity accumulated at any one time does not exceed 1 kilogram or 1 litre.*”

The typical types of waste generated within this category include:

- Used petroleum products (oils/greases)
- Contaminated snow/water/soil (oil/fuel)
- Oil and fuel filters
- Used sorbents and rags
- Hydraulic fluid
- Empty petroleum hydrocarbon containers and drums
- Glycol
- Solvents
- Fluorescent light tubes

-
- Electronics and electrical waste, and
 - Waste equipment batteries.

None of this waste is expected to be generated during the staging. The exception would be products from a spill response in the event of a spill.

Hazardous materials will be stored and managed according to the Guideline for the General Management of Hazardous Waste in the NWT (ENR 1998). Where appropriate and in compliance with legislation, used oil will be incinerated. All other types of hazardous waste will be shipped to a registered hazardous waste receiver. Canadian Zinc is a registered Waste Generator under the NWT and if any hazardous waste was generated, it would be under the register for Canadian Zinc's Prairie Creek Mine.

2.4 Recyclable Waste

Recyclable wastes comprise discarded items that can potentially be made into new products. The typical types of waste generated within this category include:

- Scrap Metal
- Beverage containers (plastic, aluminum, glass, tetra packs)
- Tires
- Electronics and electrical wastes, and
- Dry cell batteries for domestic use (e.g., AAA to D cells, 6- and 9-volt batteries).

None of this waste is expected to be generated during the staging.

Recycling is preferred over disposal as it reduces the potential environmental effects.

Lead acid batteries greater than 1 kg and rechargeable batteries are considered a contaminant under the NWT *Environmental Protection Act* and are managed as a hazardous waste. There is limited infrastructure for recycling in the Northwest Territories but such facilities do exist in nearby British Columbia.

2.5 Domestic Sewage

No sewage will be generated during staging. LUP MV2019T0021 includes a Porta Potti as part of the equipment, which will only be staged at this location in preparation for the road construction and therefore will not be used and as a result no sewage will be generated.

2.6 Training & Certification

As part of orientation, all personnel will receive basic environmental and waste management training, including:

- Managing food wastes to minimize animal attraction
- Reducing waste, and
- Separating waste (recyclables, dry-cell batteries, food waste, hazardous waste).

In addition, all personnel involved in the handling of hazardous wastes will receive Workplace Hazardous Materials Information System (WHMIS), 'Personal Safety and Protection' and Emergency Response training.

2.7 Environmental Mitigation

Environmental mitigation measures related to waste management will be adopted. These include:

- Any waste foods and human garbage will be stored in wildlife proof containers and incinerated consistent with current industry good management practices to minimize wildlife attraction and potential habituation to the local area.
- Littering will be prohibited.
- Feeding of wildlife will be prohibited.
- Adaptive management will be applied to waste management practices. If wildlife is found to be attracted to a particular site (i.e., problem wildlife) additional management practices as appropriate will be adopted.
- Employees and contractors will receive orientation on the contents of CZN's Waste Management Plan and best practices for waste management.

If in the unlikely event of a spill at the Staging Area, the Canadian Zinc's Spill Contingency Plan for the Staging Area would be used to address the spill and ensure proper clean up, management of materials, protection of the environment, and notifications. Please see the Spill Contingency Plan for the Staging Area for more information.

REFERENCES

Canadian Council of the Ministers of the Environment (CCME). 2001. Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil.

Canadian Council of the Ministers of the Environment (CCME). 2006. Municipal Wastewater Effluent in Canada. Retrieved from http://www.ccme.ca/assets/pdf/mwwe_general_backgrounder_e.pdf

Conference Board of Canada (2011). Municipal Waste Generation. Retrieved from <http://www.conferenceboard.ca/hcp/details/environment/municipal-waste-generation.aspx#context>

Environment and Natural Resources, GNWT. 2003. Used Oil and Waste Fuel Management: Plain Language Guide. Retrieved from: http://www.enr.gov.nt.ca/live/documents/content/Used_Oil_Guide.pdf

Environment Canada. 2007. Wise Water Use. Retrieved from <http://ec.gc.ca/eau-water/default.asp?lang=En&n=F25C70EC-1>

Environment Canada. 2009. Technical Document for Batch Waste Incineration. Retrieved from: www.ec.gc.ca/gdd-mw/default.asp?lang=En&n=F53EDE13-1

Mackenzie Valley Land and Water Board (MVLWB). 2011. Guidelines for Developing a Waste Management Plan

Renewable Resources, Wildlife, and Economic Development, GNWT. 1998. Guideline for the General Management of Hazardous Waste in the NWT

Renewable Resources, Wildlife, and Economic Development, GNWT. 1998. Guideline for Waste Antifreeze.

Renewable Resources, Wildlife, and Economic Development, GNWT. 1998. Guideline for Waste Batteries.

Renewable Resources, Wildlife, and Economic Development, GNWT. 1998. Guideline for Waste Solvents.

Renewable Resources, Wildlife, and Economic Development, GNWT. 2004. Guideline for Industrial Waste Discharges in the NWT